

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

(Rationalised Report according to the Notice of the President of the EPO published in the OJ11/2001)

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|--|---|---|
| Applicant's or agent's file reference AD6863PCT | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/US02/41652 | International filing date (day/month/year) 02/12/2002 | Priority date (day/month/year) 29/07/2002 |
| International Patent Classification (IPC) or national classification and IPC B32B15/08 | | |
| Applicant E. I. DU PONT DE NEMOURS AND COMPANY | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This **REPORT** consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consists of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

| | |
|---|---|
| Date of submission of the demand 13/02/2004 | Date of completion of this report 10.12.2004 |
| Name and mailing address of the IPEA/  European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Netherlands Tel.: (+31-70) 340-2040 Fax: (+31-70) 340-3016 | Authorized officer  |

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/US 02/41652**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-15 as originally filed

Claims, Numbers

1-10 as originally filed

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:
- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:
5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

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EXAMINATION REPORT**

International application No. **PCT/US 02/41652**

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

| | | |
|-------------------------------|-------------|------|
| Novelty (N) | Yes: Claims | 1-10 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-10 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-10 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

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EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US02/41652

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following document:

D1: US-A-4961994

Novelty

D1 is considered as the closest prior art and discloses a graphite or graphite fibre - epoxy composite material comprising a further heat reflecting metal layer and further comprising a protective metal oxide coating on the metal layer (claim 1; Fig. 2).

The difference being

- that the protective layer is not a glass fibre epoxy resin material but rather a metal oxide layer such as titanium oxide or aluminium oxide (col. 1 line 61-col. 2 line 1).
- the method claimed is not mentioned in **D1**.

The subject matter of independent claim 1 and dependent claims 2-10 is therefore novel and complies with Article 33(2) PCT.

Inventive step

D1 discloses as described above a graphite-epoxy composite material with a metal oxide protected heat reflecting metal layer used in space applications (col. 1 lines 8 - 46).

The difference of the subject matter of claims 1-10 with **D1** are as described above

- differences in the protective layer and the method not being mentioned in **D1**

The concepts detailed in the present application of preventing radiant thermal energy absorption by a reflective metal surface and protecting the latter by means of a protective layer are addressed in **D1** (col. 1 line 53 - col. 2 line 1). In this sense the material disclosed in **D1** could be used in the method claimed in claims 1-10 of the

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present application, however no mention whatsoever is made of an application that could hint in the direction of the method claimed.

The subject matter of independent claims 1, 28, 32 and 33 and dependent claims 2-27, 29-31 and 34-35 invokes an inventive step and hence complies with Article 33(3) PCT.

Industrial applicability

The subject matter of independent claims 1 and dependent claims 2-10 is considered to be industrially applicable. The requirements of Article 33(4) are met.

Further remarks

- 1) Document **D1** is not identified in the description and the relevant background art disclosed therein is not briefly summarised in an objective way. Therefore the requirements of Rule 5.1a(ii) PCT are not met.
- 2) The term "spirit and broad scope", employed in the last paragraph of page 15, implies the extent of protection may be expanded in some vague and not precisely defined way, casting doubt about the scope of protection; Article 6 PCT (cf. PCT International Preliminary Examination Guidelines C III 4.3a).